Stone Piles

Time Limit: 2.0s **Memory Limit:** 256M

There are n stone piles. Initially, the i-th pile contains a_i stones.

Consider a set of ranges $[L_i, R_i]$. For each range, you put one stone into every pile in that range.

A range set is called *nice* if it satisfies two conditions:

- after you put all stones according to the ranges, each pile will contain K stones,
- there are no nested ranges (i.e. no i, j such that $L_i \le L_j \le R_j \le R_i$).

How many different nice sets are there? Two sets are considered different if one of them contains a range that is not present in another one.

Input

The first line contains two integers N and K denoting the number of piles and the desired number of stones in each pile. The second line contains N integers a_i which are the initial pile sizes.

- $1 \le N \le 10^5$
- $1 \le K \le 10^9$
- $1 \le a_i \le 10^9$

Output

Print the number of nice sets modulo $10^9 + 7$.

Example

Input 1:

```
6 3
2 1 2 3 2 2
```

Output 1:

```
2
```

Explanation

Input 1: Nice sets in the sample are $([1,2],[2,3],[5,6])$ and $([1,2],[2,3],[5,5],[6,6])$.